Process Water Deduction Methodology and Analysis

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September 16, 2010.

The Statue

- *Section 10608.24 (e)* "When developing the urban water use target pursuant to Section 10608.20, an urban retail water supplier that has a **substantial percentage** of industrial water use in its service area, may exclude process water from the calculation of gross water use to avoid a **disproportionate burden** on another customer sector."

Substantial Percentage

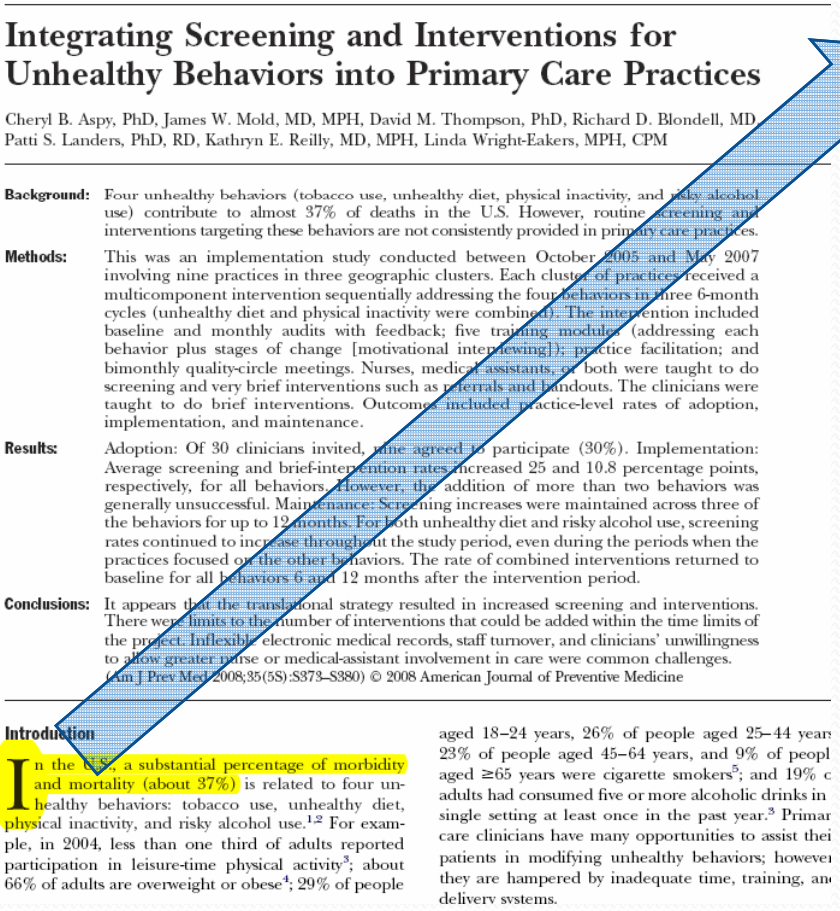
- Consulted with a statistician – no definition for substantial percentage in statistics.
- Searched for the use of "substantial percentage" in published literature. In all cases, "substantial percentage" was used to refer to numbers that are greater than or equal to 20% (shown in next few slides).
- Analyzed the water use data obtained from CUWCC for years 2005 through 2008.

Consulted a Statistician

- Consulted with Dr. Dennis Helsel, author of several statistics books including “Statistical Methods In Water Resources”. His response was as follows:

> “ … Sounds like you need to consult a lawyer more than a statistician. I've just agreed to a repair job in the main bathroom in my home and the contract said that we would be required to pay the last portion of the fees when the job was 'substantially‘ completed. I didn't sign until they took the word 'substantially‘ out. Its too nebulous.
>
> I'm familiar with the CO state government's use of the 85th percentile as a high value, but that doesn't sound like the type of percentile you're looking for. ….”

Literature Search



Integrating Screening and Interventions for Unhealthy Behaviors into Primary Care Practices

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Background: Four unhealthy behaviors (tobacco use, unhealthy diet, physical inactivity, and risky alcohol use) contribute to almost 37% of deaths in the U.S. However, routine screening and interventions targeting these behaviors are not consistently provided in primary care practices.

Methods: This was an implementation study conducted between October 2005 and May 2007 involving nine practices in three geographic clusters. Each cluster of practices received a multicomponent intervention sequentially addressing the four behaviors in three 6-month cycles (unhealthy diet and physical inactivity were combined). The intervention included baseline and monthly audits with feedback; five training modules (addressing each behavior plus stages of change [motivational interviewing]); practice facilitation; and bimonthly quality-circle meetings. Nurses, medical assistants, or both were taught to do screening and very brief interventions such as referrals and handouts. The clinicians were taught to do brief interventions. Outcomes included practice-level rates of adoption, implementation, and maintenance.

Results: Adoption: Of 30 clinicians invited, nine agreed to participate (30%). Implementation: Average screening and brief-intervention rates increased 25 and 10.8 percentage points, respectively, for all behaviors. However, the addition of more than two behaviors was generally unsuccessful. Maintenance: Screening increases were maintained across three of the behaviors for up to 12 months. For both unhealthy diet and risky alcohol use, screening rates continued to increase throughout the study period, even during the periods when the practices focused on the other behaviors. The rate of combined interventions returned to baseline for all behaviors 6 and 12 months after the intervention period.

Conclusions: It appears that the translational strategy resulted in increased screening and interventions. There were limits to the number of interventions that could be added within the time limits of the project. Inflexible electronic medical records, staff turnover, and clinicians' unwillingness to allow greater nurse or medical-assistant involvement in care were common challenges.

(Am J Prev Med 2008;35(5S):S373–S380) © 2008 American Journal of Preventive Medicine

Introduction

In the U.S., a substantial percentage of morbidity and mortality (about 37%) is related to four unhealthy behaviors: tobacco use, unhealthy diet, physical inactivity, and risky alcohol use.[1,2] For example, in 2004, less than one third of adults reported participation in leisure-time physical activity[3]; about 66% of adults are overweight or obese[4]; 29% of people aged 18–24 years, 26% of people aged 25–44 years, 23% of people aged 45–64 years, and 9% of people aged ≥65 years were cigarette smokers[5]; and 19% of adults had consumed five or more alcoholic drinks in a single setting at least once in the past year.[3] Primary care clinicians have many opportunities to assist their patients in modifying unhealthy behaviors; however, they are hampered by inadequate time, training, and delivery systems.

- "In the U.S., a *substantial percentage* of morbidity and mortality (about 37%) is related to …" (emphasis added)

Source: American Journal of Preventive medicine. 2008;35

Literature Search (cont.)

At that time, the OIG recommended that the Health Care Financing Administration (HCFA) require carriers to deactivate all provider numbers without current billing history. In October 1994 HCFA instructed the carriers to deactivate a provider number if no claims were submitted over a 3-year period.[2] Between October 1994 and February 1995 the carriers completed deactivation of provider numbers that met this criterion.

During May and June 1995, in the course of gathering survey data for a study on encouraging physicians to use paperless claims, we obtained from the carriers listings of active physician provider numbers, with December 1994 claim volumes noted for each. As was the case in 1991, we find a substantial percentage of these physician provider numbers are unused, that is, they have no recent billing history.

From a sample of active paper-biller physician provider numbers at eight carriers, we project that 65 percent were not used for billing Medicare in December 1994.

In the table below we show the unused provider number percentages at the carriers in our sample, and the projection to all carriers. Projecting the sample results to a total of 485,787 active paper-biller physician provider numbers at all 29 carriers, we estimate that 315,762 such numbers were unused nationwide.

TABLE: UNUSED PHYSICIAN PROVIDER NUMBERS

CARRIER	PAPER BILLERS	NUMBER IN SAMPLE	NUMBER UNUSED	PERCENT UNUSED	MARGIN OF ERROR
A	690	140	44	31	± 7.7%
B	18,307	320	212	66	± 5.2%
C	6,187	200	98	49	± 6.9%
D	14,736	300	187	62	± 5.5%
E	2,233	255	97	38	± 6.0%
F	2,791	260	178	68	± 5.7%
G	6,971	300	189	63	± 5.5%
H	39,263	300	216	72	± 5.1%
All Carriers	485,787	—	—	**65**	± 5.7%

- " … we found *substantial percentage* of these physician provider numbers are unused, …" (emphasis added)
- " … we project that 65 percent were not used …"

Source: Department oh health and human services, Office of the Inspector general, December 1995.

Literature Search (cont.)

- " … *substantial percentage* of households (28 percent) moved into their homes …" (emphasis added).

Source: Bureau of the Census, Census Questionnaire Content, 1990

- " A *substantial percentage* of lower-income households are unbanked. Nearly 20 percent of lower-income U.S. households …. Do not currently have a bank account (emphasis added).

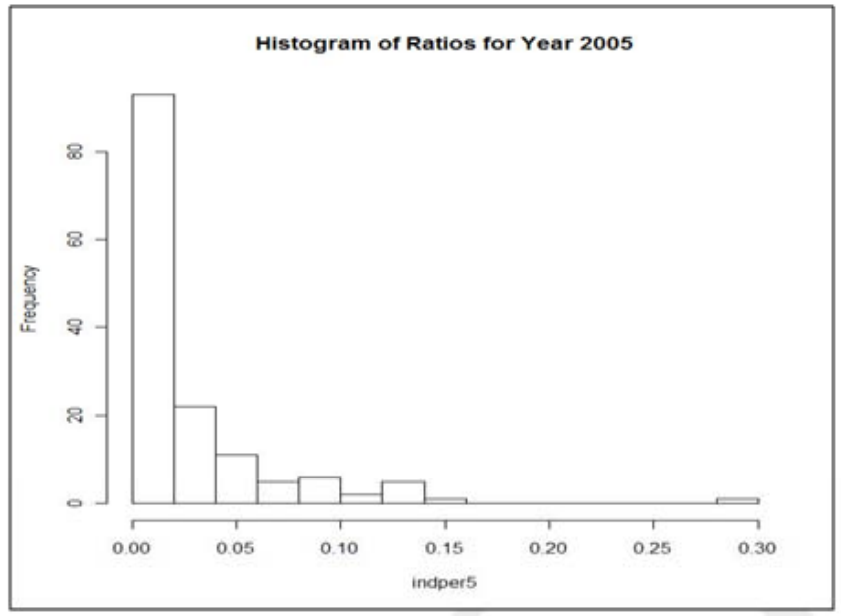
Source: FDIC National Survey of Unbanked and Underbanked Households. December 2009.

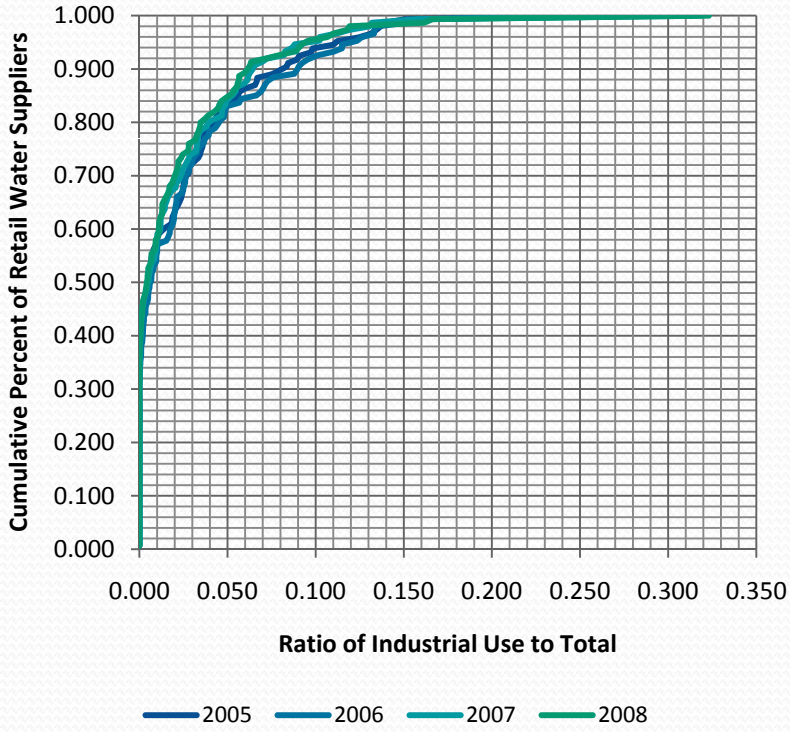
Data Analysis

- The following table shows available data for years 2005-2008 (Source: CUWCC).

Year	No. of Suppliers	Available Data
2005	146	ID, name, population, total accts, total water use, and industrial water use.
2006	147	ID, name, population, total accts, total water use, and industrial water use.
2007	149	ID, name, population, total accts, total water use, and industrial water use.
2008	150	ID, name, population, total accts, total water use, and industrial water use.

Percentage of Industrial Water Use

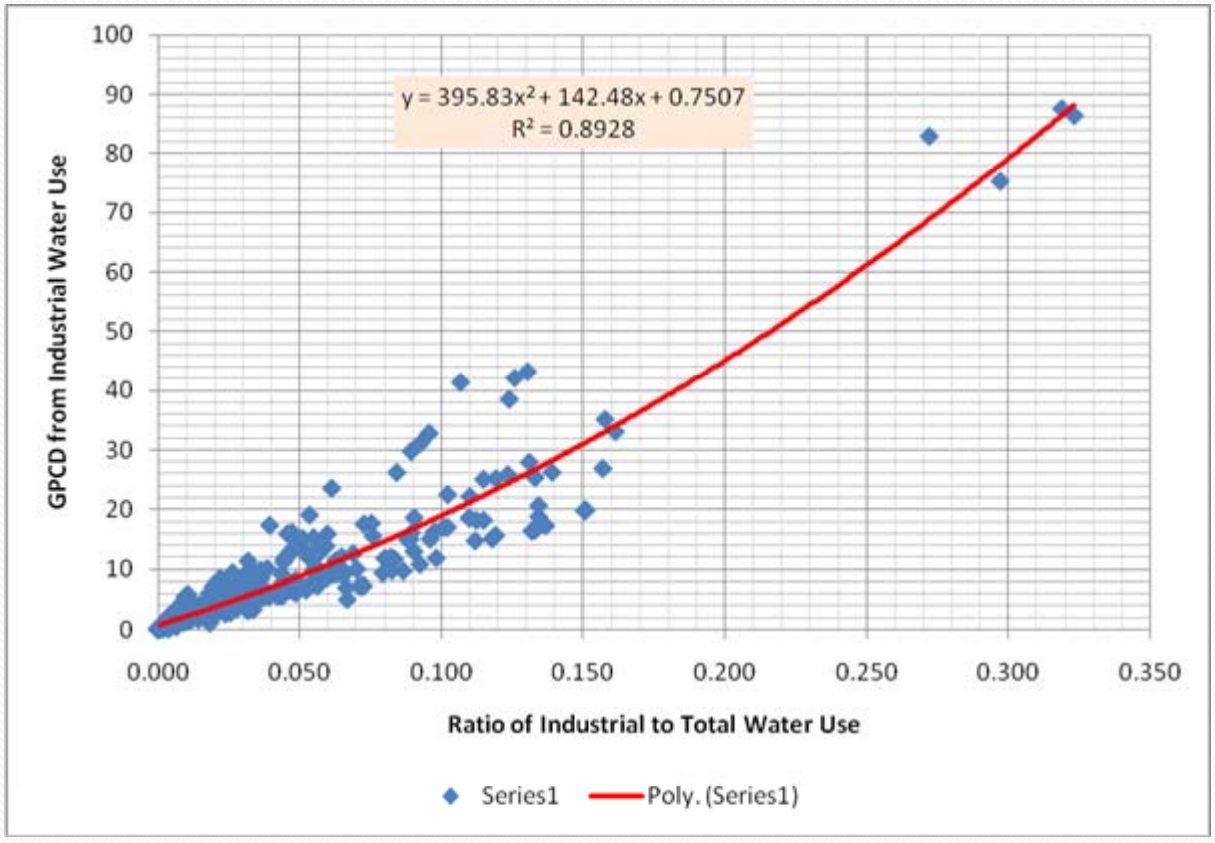




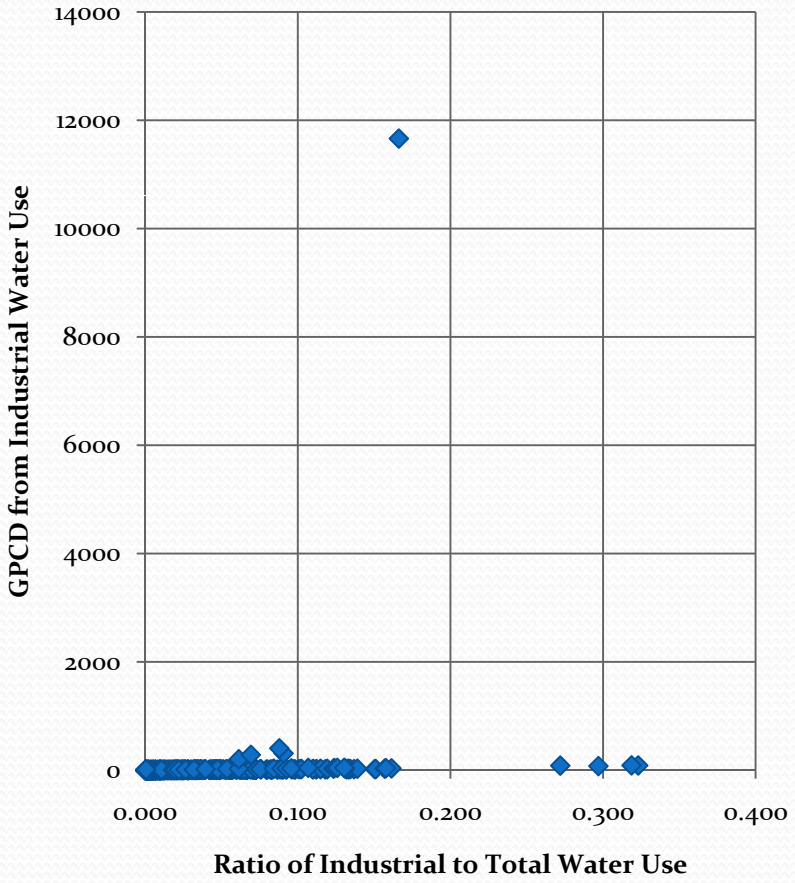
Percentage of Industrial Water Use

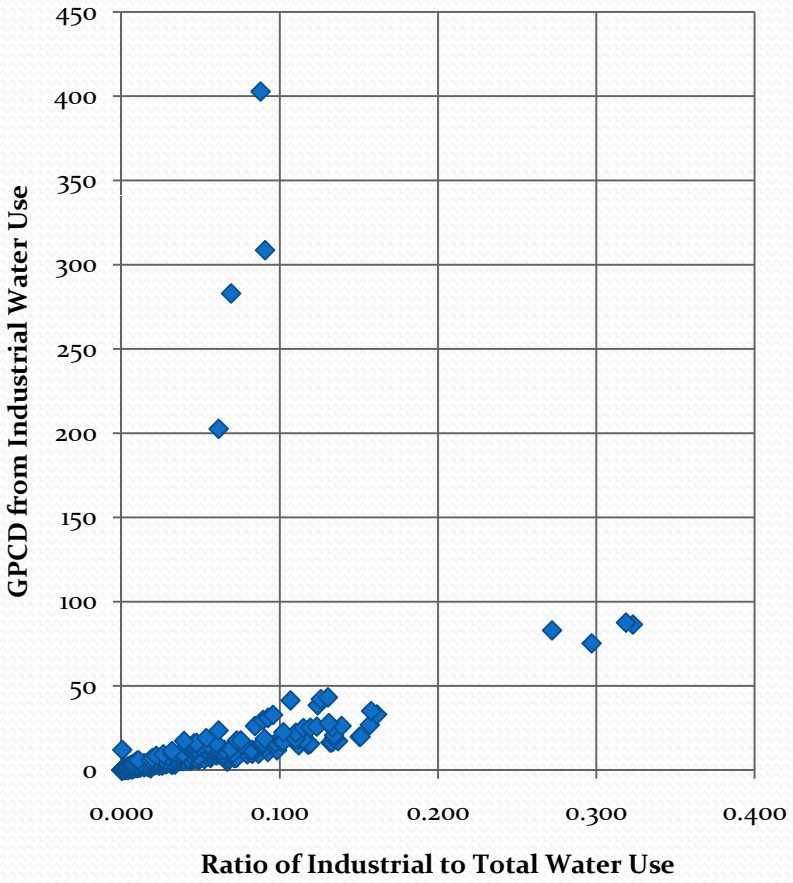
Percent of Suppliers	2005	2006	2007	2008	Average
60	1.5	1.8	1.2	1.1	1.0
65	2.3	2.1	1.5	1.4	1.8
70	2.7	2.7	2.4	2.0	2.0
75	3.6	3.4	3.2	2.8	3.0
80	4.3	4.6	4.0	3.5	4.0
85	5.6	6.6	5.3	5.1	5.7
90	8.1	9.0	6.4	6.2	7.0
95	11.2	12.3	10.1	9.4	10.8

GPCD from Industrial Water Use



Removing Outliers





Substantial Percentage Determination

- Based on analysis of the CUWCC data, comments received from some work group members, and literature search, 15% was taken as a substantial percentage of industrial water use.
- For water suppliers whose industrial water use is less than 15%, three options that we thought would incorporate some of the comments provided and concerns raised by the U5 work group are suggested.

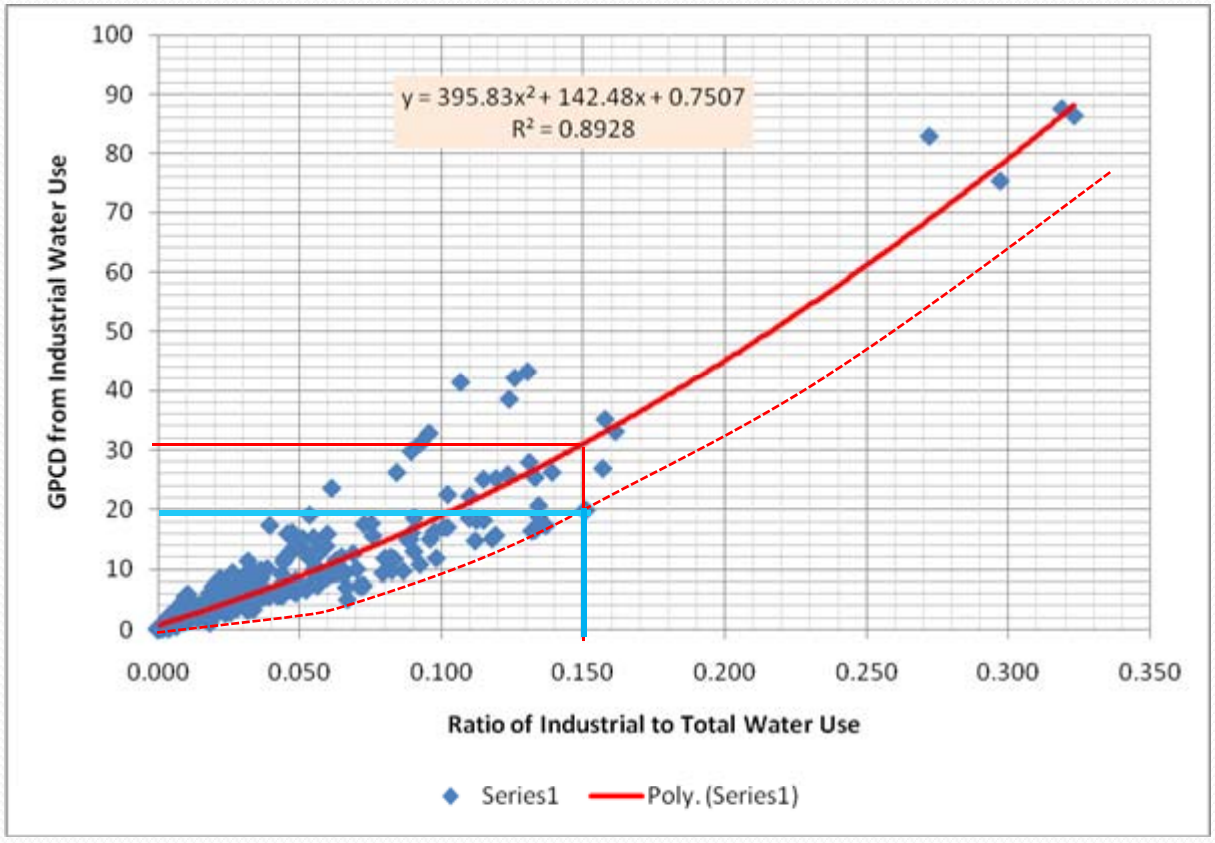
Option #1

- If percentage of your industrial water use to total water use is:
  1. greater or equal to 15 percent, deduct all process water
  2. less than 2.5 percent, no deduction
  3. 2.5-4.9 percent, deduct 10% of your process water
  4. 5.0-7.49 percent, deduct 25% of your process water
  5. 7.5-9.9 percent, deduct 45% of your process water
  6. 10.0-14.49 percent, deduct 80% of your process water.

Option #2

- If percentage of your industrial water use to total water use is greater than 15%, deduct all process water.
- If percentage of your industrial water use to total water use is less than 15%:
  1. calculate gpcd of industrial water use (gpcd-ind).
  2. subtract 20 from gpcd-ind. If this value is negative, no deduction. If it is positive, proceed to step 3 below.
  3. multiply the result of step 2 by the fraction of your process water to the total industrial water. You can deduct this amount from your gross water.

GPCD from Industrial Water Use



Option #3

- If percentage of your industrial water use to total water use is greater than 15%, deduct all process water.
- If percentage of your industrial water use to total water use is less than 15%:
  - Calculate gpcd of non-industrial water use (gpcd-ni).
  - If your gpcd-ni is:
    1. less than 145, deduct 50% of your process water
    2. 145-195, deduct 25% of your process water
    3. 196-275, deduct 10% of your process water
    4. 276-400, deduct 5% of your process water
    5. greater than 400, no deduction.